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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/735,725      | 12/16/2003  | Tsunenori Yamamoto   | 503.39221CX1        | 3672             |

20457 7590 12/28/2006  
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| EXAMINER |
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| ART UNIT | PAPER NUMBER |
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2629

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| MAIL DATE | DELIVERY MODE |
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12/28/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/735,725

Applicant(s)

YAMAMOTO ET AL.

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 June, 15 September & 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20,23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/695,174.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>15 June 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed (on 15 June 2006) in this application after final rejection (mailed 16 June 2005). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 15 September 2006 has been entered.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/695,174, filed on 25 October 2000.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 11, 23, and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

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relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

5. Claims 1, 11, 23, and 24 are further rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Newly amended independent claim 1 and newly added claims 23 and 24 each separately recites the subject matter of an "illumination control means for controlling an illumination start time and an illumination 'on' time of each of the illumination areas of the illumination unit independently, *in response to a result of the comparison of a new display data with a previous display data* (emphasis added); and newly amended independent claim 11 recites the subject matter of an "illumination control means for controlling the light amount adjusting part of the illumination unit *in response to a result of the comparison of a new picture signal with a previous picture signal*, to control a lighting timing and a lighting period of time of each of the plurality of illumination areas of the light source independently" (emphasis again added).

Such aforementioned subject matter was not described in the specification. At the very least, such aforementioned subject matter was not described in the specification, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As evidenced in Embodiment 1's display controller, the lighting

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control circuit [Fig. 2; 120] is independent from the comparison result of data emphasis operational circuit [Fig. 2;112] (see page 8 of the specification). Furthermore, as evidenced in Embodiment 2's display controller, the lighting control circuit [Fig. 8; 120] remains independent from the comparison result of data emphasis operational circuit [Fig. 8;112] (see pages 13-15 of the specification).

6. Claims 2-10 and 12-20 are further rejected under 35 U.S.C. 112, first paragraph, simply due to their respective shared dependencies upon rejected base claims 1 and 11.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 11, 23, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are between the originally recited "new display data," "previous display data," and "result of the comparison" (see claim 1, lines 11-15; claim 23, lines 11-15; and claim 24, lines 6-10) and the later recited "result of the comparison of a new display data with a previous display data" (see claim 1, lines 20-21; claim 23, lines 20-21; and claim 24, lines 15-16).

Similarly, additional omitted structural cooperative relationships are between the originally recited "new picture signal," "previous picture signal," and "result of the comparison"

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(see claim 11, lines 4-8) and the later recited "result of the comparison of a new picture signal with a previous picture signal" (see claim 11, lines 14-15).

It would be unclear to one having ordinary skill in the art, whether the respective claims in question are discussing two separate and distinct sets of new/previous display data, new/previous picture signals, and comparison results; or whether these claims are referring to the same/shared set of new/previous display data, new/previous picture signals, and comparison results.

9. Claims 2-10 and 12-20 are further rejected under 35 U.S.C. 112, second paragraph, simply due to their respective shared dependencies upon rejected base claims 1 and 11.

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. (US 6,115,018) in view of Chen (US 5,592,193).

Regarding claim 1, Okumura discloses a liquid crystal display apparatus comprising a pair of substrates, at least one of which is transparent; a liquid crystal layer disposed between the substrates; a plurality of groups of electrodes [Fig. 1; M & N] disposed on at least one of the pair of substrates for applying an electric field to the liquid crystal layer; a liquid crystal display part

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having a plurality of active elements [Fig. 1; Clc] connected to the electrodes; drive means [Fig. 3; 21 & 25] supplied with display data from means for supplying data [Fig. 3; RGB Signal] to be displayed, for driving the individual pixels [Fig. 1; Clc] of the liquid crystal display part by applying a voltage corresponding to the display data to the individual pixels (see Column 1, Line 50 - Column 2, Line 17), the drive means including data emphasis means for comparing new display data supplied from the means for supplying data to be displayed with previous display data supplied from the means for supplying data to be displayed, and emphasizing and converting the new display data to designated display data in response to a result of the comparison and the supplied data (see Column 1, Lines 18-36 and Column 7, Line 60 - Column 9, Line 13). Okumura does not explicitly disclose an illumination unit nor an illumination control means.

However, Chen does disclose an illumination unit [Fig. 3; 64] including a plurality of illumination areas [Fig. 3; 64a-j] for illuminating a liquid crystal display part [Fig. 3; 62]; and an illumination control means [Fig. 3; 66] for controlling an illumination start time and an illumination "on" time of each of the illumination areas of the illumination unit independently in response to a response of the liquid crystal display part (see Column 4, Line 23 - Column 5, Line 6).

Okumura and Chen are analogous art because they are from the shared field of driving liquid crystal displays. Thus, it would have been obvious to one skilled in the art at the time of invention to use Chen's backlight circuitry and synchronization method with Okumura's liquid crystal apparatus and comparison result, so as to provide a clear, bright image for display.

Regarding claim 2, Okumura discloses in case that any change is detected in the display data by the comparison, the data emphasis means emphasizes and converts the new display data so as to increase the change, and modifies a response of a corresponding pixel of the liquid crystal display part so as to be larger than a value corresponding to an original value of the new display data (see Column 1, Lines 18-36 and Column 7, Line 60 - Column 9, Line 13).

Additionally, Chen discloses that the illumination control means controls the illumination start time and the illumination "on" time of a corresponding one of the illumination areas [Fig. 3; 64<sub>a-j</sub>] of the illumination unit so that a time integral value of an amount of light passing through the corresponding pixel while a display characteristic is changing is substantially identical to a time integral value of an amount of light passing through the corresponding pixel while the display characteristic is stable (see Column 4, Line 23 - Column 5, Line 6).

Regarding claim 3, this claim is rejected by the same reasoning applied in the above rejection of claim 2; moreover Chen discloses the illumination control means controls the illumination start time and the illumination "on" time of a corresponding one of the illumination areas [Fig. 3; 64<sub>a-j</sub>] of the illumination unit so that visual sensation values with respect to the light passing through the corresponding pixel in the course of response and after response are substantially identical to each other (see Column 4, Line 23 - Column 5, Line 6).

Regarding claim 4, Chen discloses the illumination start time and the illumination "on" time of a corresponding one of the illumination areas [Fig. 3; 64<sub>a-j</sub>] of the illumination unit are predefined so as to be equal to average values of optimal values for all the display data



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dependent on the individual display data according to the response of the liquid crystal display part after data conversion (see Column 4, Line 23 - Column 5, Line 6).

Regarding claim 5, this claim is rejected by the same reasoning applied in the above rejection of claim 4.

Regarding claim 6, this claim is rejected by the same reasoning applied in the above rejection of claim 4.

Regarding claim 7, Chen discloses the illumination start time and the illumination "on" time of a corresponding one of the illumination areas [Fig. 3; 64<sub>a-j</sub>] of the illumination unit are changed adaptively and determined so as to be average values weighted with the number of display data to be displayed at the area among values dependent on the individual display data according to the response of the liquid crystal display part after data emphasis and conversion (see Column 4, Line 23 - Column 5, Line 6).

Regarding claim 8, this claim is rejected by the same reasoning applied in the above rejection of claim 7.

Regarding claim 9, this claim is rejected by the same reasoning applied in the above rejection of claim 7.

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Regarding claim 10, Chen discloses the light source includes a sheet-type light emitting element (see Column 4, Line 23 - Column 5, Line 6).

Regarding claim 11, this claim is rejected by the reasoning applied in the above rejection of claim 1; furthermore, Okumura discloses the display data is provided as a picture signal [Fig. 3; RGB Signal] (see Column 8, Lines 21-37). Okumura does not explicitly disclose a light source; an illumination unit, nor an illumination control means.

However, Chen does disclose at least one light source [Fig. 3; 64]; an illumination unit including a light amount adjusting part [Fig. 3; 66] for adjusting an amount of light from the light source for a plurality of illumination areas [Fig. 3; 64<sub>a-j</sub>] of the illumination unit, and an illumination control means [Fig. 3; 66] for controlling the light amount adjusting part of the illumination unit in response to display contents of the liquid crystal display part [Fig. 3; 62] to control a lighting timing and a lighting period of time of each of the plurality of illumination areas of the light source independently (see Column 4, Line 23 - Column 5, Line 6).

Thus, it would have been obvious to one skilled in the art at the time of invention to use Chen's backlight circuitry and synchronization method with Okumura's liquid crystal apparatus and comparison result, so as to provide a clear, bright image for display.

Regarding claim 12, Chen discloses the light amount adjusting part of the illumination unit is transparent to light when a voltage is not applied to the light amount adjusting part (see Column 4, Line 23 - Column 5, Line 6).

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Regarding claim 13, this claim is rejected by the same reasoning applied in the above rejection of claim 10.

Regarding claim 14, this claim is rejected by the same reasoning applied in the above rejection of claim 2.

Regarding claim 15, this claim is rejected by the same reasoning applied in the above rejection of claim 3.

Regarding claim 16, this claim is rejected by the same reasoning applied in the above rejection of claim 4.

Regarding claim 17, this claim is rejected by the same reasoning applied in the above rejection of claim 4.

Regarding claim 18, this claim is rejected by the same reasoning applied in the above rejection of claim 17.

Regarding claim 19, this claim is rejected by the same reasoning applied in the above rejection of claim 17.

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Regarding claim 20, this claim is rejected by the same reasoning applied in the above rejection of claim 17.

Regarding claim 23, this claim is rejected by the same reasoning applied in the above rejection of claims 1 and 2.

Regarding claim 24, this claim is rejected by the same reasoning applied in the above rejection of claim 1.

#### ***Response to Amendment***

12. The 'Submission of Declaration under 37 CFR 1.132' filed 31 October 2006 is insufficient to overcome the rejection of claims 1-20 based upon insufficiency of disclosure under 35 U.S.C. 112, first paragraph as set forth in the last Office action because: the declaration fails to set forth facts, and the declaration lacks technical validity.

The affiant, Ikuo Hiyama, is cordially thanked for the declaration. However, rather than setting forth facts of how the instant invention functions, the declaration merely provides a series of subjective opinions and repeats arguments earlier presented on the record by the applicants.

Pertaining to the first inventive embodiment, Ikuo Hiyama states, "*Through my knowledge and experience as one skilled in the art, I would expect that when new/previous display data are inputted into a common component (e.g., data emphasis operation circuit [Fig. 2; 112], such would be subjected to a comparison operation and a comparison result then used to control something*" (see Page 3, Bottom Paragraph of the Declaration).

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However, the declaration nowhere addresses the physical and electrical impossibility of the image comparison signal output from the "Data Emphasis Operational Circuit" [Fig. 2; 112] controlling the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]. The "Lighting Control Signal for Illumination Unit" is clearly illustrated in Figures 1, 2, and 6 as directly connecting the "Lighting Control Circuit for Illumination Unit" [Figs. 1 & 2; 120] to the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]. The applicants admit (see Page 13, Lines 9-10 of the 'Statement of Substance and Response' filed 17 April 2006), and the declaration reinforces, that the image comparison signal is produced by the "Data Emphasis Operational Circuit" [Fig. 2; 112]. Furthermore, that same image comparison signal output from the "Data Emphasis Operational Circuit" [Fig. 2; 112] is directly connected to nothing except the "Timing Adjusting Circuit" [Figs. 1 & 2; 130].

Therefore, there still exists no factual evidence on the record of how the instant invention is enabled for an image comparison signal controlling the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310], when that image comparison signal is nowhere taught being provided to the "Drive Circuit for Illumination Unit."

Pertaining to the second inventive embodiment, Ikuo Hiyama states, "*my understanding (as one skilled in the art) is that such new/previous display data inputted into the common component of the illumination lighting controller [Fig. 8; 122], would be subjected to a comparison operation within the illumination lighting controller [Fig. 8; 122], and a comparison result, used to, control something*" (see Page 4, 2nd Paragraph of the Declaration).

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However, the declaration stops short of pointing to any section of the original disclosure which directly supports the position that the "Illumination Lighting Controller" [Fig. 8; 122] performs the comparison of the previous display data and the new display data.

Ikuro Hiyama next states, *"I note from FIG. 8 that the illumination lighting controller [Fig. 8; 122]'s output are labeled 'LIGHTING CONTROL SIGNAL FOR ILLUMINATION UNIT', and accordingly, my understanding is that the illumination lighting controller [Fig. 8; 122]'s comparison result is ultimately used to control the illumination unit"* (see Page 4, 2nd Paragraph of the Declaration).

However, there still exists no factual evidence on the record of how the instant invention is enabled for an image comparison result controlling the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310], when that image comparison result is nowhere taught being provided from the illumination lighting controller [Fig. 8; 122] to the "Drive Circuit for Illumination Unit."

Ikuro Hiyama also states, *"in order to estimate the average value in real time, the comparison and the calculation of the amount of overshoot have to be performed in or by the illumination lighting controller [Fig. 8; 122] as in the data emphasis operational circuit [Fig. 8; 122]."* (see Page 4, 2nd Paragraph of the Declaration).

However, the examiner respectfully notes that conceivably, the illumination lighting controller [Fig. 8; 122] could estimate the average value in real time based solely on either the new display data or the previous display data -- not necessarily based on an image data comparison result. Furthermore, the examiner respectfully notes that just because counter data is provided from the counter [Fig. 8; 121] to the illumination lighting controller [Fig. 8; 122]; it

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does not necessarily follow that counter data signals are *compared* to the new display data and the previous display data.

The instant specification nowhere expressly teaches an image comparison result controlling the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]; and a declaration theorizing how such image comparison result control might be possible is not deemed persuasive.

By such reasoning, rejection of the claims under 35 U.S.C. 112, first paragraph is deemed necessary, proper, and thereby maintained at this time.

### ***Response to Arguments***

13. Applicants' arguments filed 15 September 2006 have been fully considered but they are not persuasive.

Applicants' arguments filed 17 April 2006 have been fully considered but they are not persuasive. Firstly, the applicants contend the 35 U.S.C. 112, first paragraph rejection is in error, because, "Applicant's drive circuit [Figs. 1 & 6; 310] is Applicant's claimed 'illumination control means' " (see Page 14 of the 'Statement of Substance and Amendment' filed 15 September 2006); and therefore the instant specification discloses an "illumination control means for controlling an illumination start time and an illumination 'on' time of each of the illumination areas of the illumination unit in response to a result of the comparison of a new display data with a previous display data" as claimed in claim 1. However, the examiner respectfully disagrees.

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Regarding the first inventive embodiment, the "Lighting Control Signal for Illumination Unit" is clearly illustrated in Figures 1, 2, and 6 as directly connecting the "Lighting Control Circuit for Illumination Unit" [Figs. 1 & 2; 120] to the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310].

The applicants admit the image comparison signal is produced by the "Data Emphasis Operational Circuit" [Fig. 2; 112] (see Page 14 of the 'Statement of Substance and Amendment' filed 15 September 2006). Furthermore, that same image comparison signal output from the "Data Emphasis Operational Circuit" [Fig. 2; 112] is directly connected to nothing except the "Timing Adjusting Circuit" [Figs. 1 & 2; 130]. As would be recognized by one having ordinary skill in the art at the time of invention, it is physically and electrically impossible for the image comparison signal output from the "Data Emphasis Operational Circuit" [Fig. 2; 112] to control the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]. The circuitry making possible what the applicants are claiming is simply not present in the instant specification.

The applicants point to a teaching from the original specification as lending support for the disputed subject matter (see Page 14 of the 'Statement of Substance and Amendment' filed 15 September 2006). However, this section of the specification actually contradicts what the applicants are arguing. The instant specification states, "the drive circuit 310 for the illumination unit 300 can light the individual areas with their own different illumination start time and illumination 'on' time in response to a control signal supplied from the display controller" (see Page 12, Lines 10-13 of the instant specification).



The display controller contains the aforementioned "Lighting Control Circuit for Illumination Unit" [Figs. 1 & 2; 120], which is itself directly connected to the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]. Neither the instant illustrations nor the written description anywhere teaches the image comparison signal produced by the "Data Emphasis Operational Circuit" [Fig. 2; 112] playing any role whatsoever in controlling the operation of either the "Lighting Control Circuit for Illumination Unit" [Figs. 1 & 2; 120] or the "Drive Circuit for Illumination Unit" [Figs. 1 & 6; 310]. The "Data Emphasis Operational Circuit" [Fig. 2; 112] affects display signals sent to the liquid crystal display [Fig. 1; 200]. However, the "Data Emphasis Operational Circuit" [Fig. 2; 112] fails to have any bearing on what the "Illumination Unit" [Fig. 1; 300] is doing.

The applicants additionally state, "the Office Action [mailed 16 June 2005] comments have erroneously focused in on Applicant's second (Fig. 8) embodiment, whereas the above-mentioned FIGS./text explicitly teach Applicant's claimed limitations" (see Page 15 of the 'Statement of Substance and Amendment' filed 15 September 2006). The examiner hereby takes this statement as an implicit election of the applicants' first inventive embodiment. All claims drawn to any other independent and distinct inventive embodiments should be withdrawn, so as to prevent a burdensome search and examination.

Even though the applicants take issue with the examiner broaching the topic of the second embodiment in an earlier Office Action, the applicants also contradictorily now argue in

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support of the second embodiment by contending, "The illumination lighting controller [Fig. 8; 122] performs the comparison of the previous display data and the new display data with each other" (see Pages 15-16 of the 'Statement of Substance and Amendment' filed 15 September 2006). Despite the above contention, the applicants are incapable of pointing to any section of the original disclosure which directly supports their current position that the "Illumination Lighting Controller" [Fig. 8; 122] performs the comparison of the previous display data and the new display data.

The applicants quote several sections of text from page 14 of the instant specification (see Page 16 of the 'Statement of Substance and Amendment' filed 15 September 2006). However, there exists no teaching on page 14 or any other page of the instant specification that says the "Illumination Lighting Controller" [Fig. 8; 122] performs a comparison of previous display data with new display data. The sections of the specification quoted by the applicants merely explain that the "Illumination Lighting Controller" [Fig. 8; 122] is supplied with image data, and that illumination start and 'on' times "change in response to the display data" (see Page 14, Lines 16-19 of the instant specification). This is hardly considered a teaching of comparison between previous display data and new display data.

Regarding the second inventive embodiment, the applicants contend the "new display data" and the "previous display data" are compared in the "Illumination Lighting Controller" [Fig. 8; 122] (see Page 16 of the 'Statement of Substance and Amendment' filed 15 September 2006). However, the examiner respectfully disagrees. As evidenced in Embodiment 2's

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"Display Controller" [Fig. 8; 100], the "Lighting Control Circuit for Illumination Unit" [Fig. 8; 120] remains utterly independent from the image comparison signal output from the "Data Emphasis Operational Circuit" [Fig. 8; 112] (see also Pages 13-15 of the instant specification).

Next, the applicants state, "The 35 USC § 102 (sic) rejection of Claims 1-20 stand unpatentable over Okumura et al. (US 6,115,018 A) in view of Chen (US 5,592,193 A) is respectfully traversed. Such rejection has been made obsolete by the present clarifying amendments to the claims, and accordingly, traversal arguments are not appropriate at this time" (see Page 21 of the 'Statement of Substance and Amendment' filed 15 September 2006). It should be noted that claims 1-20 have been rejected under 35 USC § 103(a), not "35 USC § 102," as argued by the applicants.

Finally, the applicants contend the cited prior art of Okumura et al. and Chen neglect teaching comparison of a prior art image together with a present image, and then adjusting both of an LCD's illumination start/on times responsive to a result of the comparison. However, the examiner respectfully disagrees.

Okumura discloses a drive means [Fig. 3; 21 & 25] including data emphasis means for comparing new display data supplied from the means for supplying data [Fig. 3; RGB Signal] to be displayed with previous display data supplied from the means for supplying data to be displayed, and emphasizing and converting the new display data to designated display data in

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response to a result of the comparison and the supplied data (see Column 1, Lines 18-36 and Column 7, Line 60 - Column 9, Line 13).

Additionally, Chen discloses an illumination unit [Fig. 3; 64] including a plurality of illumination areas [Fig. 3; 64a-j] for illuminating a liquid crystal display part [Fig. 3; 62]; and an illumination control means [Fig. 3; 66] for controlling an illumination start time and an illumination "on" time of each of the illumination areas of the illumination unit in response to a response of the liquid crystal display part (see Column 4, Line 23 - Column 5, Line 6).

Okumura and Chen are analogous art because they are from the shared field of driving liquid crystal displays. Thus, it would have been obvious to one skilled in the art at the time of invention to use Chen's backlight circuitry and synchronization method with Okumura's liquid crystal apparatus and comparison result, so as to provide a clear, bright image for display.

The applicants contend Okumura is correcting voltage and not "start/on times"; and further does not teach timing control. However, the examiner respectfully counters that present claim language merely speaks of "controlling an illumination start time and an 'illumination 'on' time" (see Claim 1, Lines 18-19) -- correcting "start/on times" has not been claimed. Furthermore, while Okumura indisputably compares new and old display data, Okumura has not been relied upon as teaching such "controlling an illumination start time and an 'illumination 'on' time" subject matter. Instead, Chen has been relied upon as teaching controlling an illumination start time and an illumination 'on' time (see Column 4, Line 23 - Column 5, Line 6).

The applicants contend Chen "does not teach adjusting both of an LCD's illumination start/on times responsive to a result of the comparison" (see Page 24 of the 'Statement of Substance and Amendment' filed 15 September 2006). However, while Chen indisputably controls start/on times, Chen has not been relied upon as teaching comparing between new and old display data. Instead, Okumura has been relied upon as teaching comparing new display data supplied from the means for supplying data [Fig. 3; RGB Signal] to be displayed with previous display data supplied from the means for supplying data to be displayed, and emphasizing and converting the new display data to designated display data in response to a result of the comparison and the supplied data (see Column 1, Lines 18-36 and Column 7, Line 60 - Column 9, Line 13).

The applicants accuse the examiner of ignoring "major deficiencies" with respect to the applied references (see Page 25 of the 'Statement of Substance and Amendment' filed 15 September 2006). However, the examiner respectfully disagrees. These supposed "major deficiencies" are little more than a complaint that neither 35 USC § 103(a) reference in and of itself teaches every instant claim limitation. The examiner respectfully reminds the applicants that despite their erroneous belief that claims 1-20 have been rejected under "35 USC § 102" (see Page 21 of the 'Statement of Substance and Amendment' filed 15 September 2006); in point of fact, claims 1-20, 23, and 24 have been rejected under 35 USC § 103(a). And when combined, the applied references teach each and every limitation currently being claimed by the applicants.

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By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Jeff Piziali  
20 December 2006